

Lab 4 - Timer Calculations

Friday, March 27, 2020

10:56 AM

Part I

Timer Frequencies:

2Hz

1Hz

.25Hz

Timer calculations

Pbclk = 10Mhz

Use timer 1 - 16 bits

Max count = 65535

Max divide value 256

$PBCLK/256 = 39,062 \text{ Hz}$ $Tin = 25.6 \text{ uSec}$

$.5\text{Sec}/25.6\text{uSec}/\text{count} = 19531 \text{ count}$

Part II

$PBCLK/256 = 39,062 \text{ Hz}$ $Tin = 25.6\text{uSec}$

$10\text{Sec}/(25.6\text{uSec}/\text{count}) = 390,625 \text{ counts}$

Need a 32 bit timer - we will use Timers 2,3

Use a different divider value

Use a divisor of 64

$Tin = 6.4\text{uSec}$

$10\text{Sec}/(6.4\text{uSec}/\text{count}) = 1,562,500 \text{ counts}$